



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,076	12/16/2004	Kenichi Kawano	25613-000008/US	3430
30593	7590	11/03/2006		EXAMINER
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			SHAH, MANISH S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	✓Applicant(s)	
	10/518,076	KAWANO, KENICHI	
	Examiner	Art Unit	
	Manish S. Shah	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/16/04;9/7/05
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: one monomer selected from vinyl ethers represented by the following formulas (I-a) to (I-o). Applicant says that following formula (I-a) to (I-o), but it doesn't have any formula, and furthermore, applicant can not use the parentheses in the claim, because parentheses use it for deleting the words. Appropriate correction required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (# US 2002/0008753 A1) in view of Winnik et al. (# US 5145518) and Ishida et al. (# US 2002/0182378).

Art Unit: 2853

• An image recording method for causing an ink to adhere on a recording medium, which is provided with at least one ink-receiving layer on a base material, to form an image (see Abstract), characterized in that said ink is an inkjet recording ink composed of a water-insoluble colorant, a water-soluble organic solvent and water ([0062]-[0068]), wherein said water-insoluble colorant is an oil-soluble dye and/or a vat dye ([0057]); and said ink-receiving layer comprises fine inorganic particles ([0020]-[0022]) and a water-soluble resin and/or water-dispersible resin, and a surface pH of said ink-receiving layer is controlled within a range of from 3.0 to 6.5 ([0071]).

• The ink-receiving layer further comprises cationic fine organic particles and a cationic polymer ([0031]-[0032]), wherein a weight average molecular weight of said cationic polymer is from 5,000 to 200,000 ([0032]), and the cationic polymer is used in a proportion of from 0.05 to 5 wt. % based on said fine inorganic particles ([0033]).

• The fine inorganic particles are made of at least one of silica, alumina and aluminium hydrate of the boehmite structure or pseudo-boehmite structure each of which has an average particle size of from 100 to 300 nm ([0021]-[0024]).

• The ink-receiving layer further comprises a water-soluble multivalent metal salt, wherein said water-soluble multivalent metal salt is used in a proportion of from 0.1 to 10 wt. % based on said fine inorganic particles ([0034], [0039]).

Suzuki et al. differs from the claim of the present invention is that:

(1) A high-molecular dispersant formed of a block copolymer comprising at least one hydrophobic block and at least one hydrophilic block.

Art Unit: 2853

(2) A content of the cationic fine organic particles in said ink-receiving layer is from 0.1 to 25 wt. % based on a dry weight of said ink-receiving layer, a weight average molecular weight of said cationic fine organic particles is from 100,000 to 1,000,000, and the cationic fine organic particles have a glass transition temperature of from 60 to 110.degree C.

(3) The hydrophilic block is a polymer of a vinyl ether having at least one carboxyl group.

(4) The high-molecular dispersant is a block copolymer obtained by polymerizing vinyl ethers as monomers, and has pH stimulation responsibility such that high molecular chains of said block copolymer can undergo association when a pH of said ink is lowered.

Winnik et al. teaches that the ink with good water fastness, good light fastness characteristic, ink composition having a high-molecular dispersant formed of a block copolymer comprising at least one hydrophobic block and at least one hydrophilic block (column: 7, line: 60-68). They also teach that the hydrophilic block is a polymer of a vinyl ether having at least one carboxyl group (column: 8, line: 1-40). They also teach that the high-molecular dispersant is a block copolymer obtained by polymerizing vinyl ethers as monomers, and has pH stimulation responsibility such that high molecular chains of said block copolymer can undergo association when a pH of said ink is lowered (column: 8, line: 10-68; column: 9, line: 1-68).

Art Unit: 2853

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Suzuki et al. by the aforementioned teaching of Winnik et al. in order to have a water fastness and light fastness printed image.

Ishida et al. teaches that to have the inkjet recording sheet with excellent gloss, ink absorptivity and color density, the recording medium having an ink receiving layer, which includes a cationic fine organic particle, wherein a content of the cationic fine organic particles in said ink-receiving layer is from 0.1 to 25 wt. % based on a dry weight of said ink-receiving layer ([0067]), a weight average molecular weight of said cationic fine organic particles is from 100,000 to 1,000,000 ([0070]), and the cationic fine organic particles have a glass transition temperature of from 60 to 110.degree C ([0074]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink-receiving layer of Suzuki et al. by the aforementioned teaching of Ishida et al. in order to have the inkjet recording sheet with excellent gloss, ink absorptivity and color density.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to incorporate the inorganic particle having an average particle size of from 100 to 300 nm, since it has been held that it is not inventive to discovering and optimum value or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA1955).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Manish S. Shah  
Primary Examiner  
Art Unit 2853

MSS

10/27/06